GARDEN AND FOREST.

PUBLISHED WEEKLY BY

THE GARDEN AND FOREST PUBLISHING CO.

OFFICE: TRIBUNE BUILDING, NEW YORK.

Conducted by . . . . . Professor C. S. SARGENT.

ENTERED AS SECOND-CLASS MATTER AT THE POST-OFFICE AT NEW YORK, N. Y.

NEW YORK, WEDNESDAY, SEPTEMBER 19, 1894.

TABLE OF CONTENTS.

PAGE.

EDITORIAL ARTICLES:—The Element of Beauty in City Parks 371
The Constitutional Amendment Relating to State Forest-lands 372
Vases for Cut Flowers ..... *W. G.* 372
The Woodpecker and Bird's-eye Poplar ..... *Professor A. D. Hopkins.* 373
ENTOMOLOGICAL:—The Flat-head Pear-borer. (With figure.) *Professor John B. Smith.* 373
FOREIGN CORRESPONDENCE:—London Letter ..... *W. Watson.* 374
NEW OR LITTLE-KNOWN PLANTS:—Indigofera decora alba. (With figure.) 376
PLANT NOTES 376
CULTURAL DEPARTMENT:—Seasonable Work ..... *E. O. Orpet.* 376
Dutch Bulbs ..... *F. N. Gerard.* 377
Crinum Moorei ..... *F. N. Gerard.* 377
Jelly Fruits ..... *E. P. Powell.* 377
Bush Lima Beans ..... *Quis.* 378
Muskmelon Emerald Gem ..... *R. A.* 378
Lilium sulphureum ..... *G.* 378
Old Varieties of Apples ..... *E. P. P.* 378
CORRESPONDENCE:—United States Nurseries, Short Hills, New Jersey. *W. N. Craig.* 378
MEETINGS OF SOCIETIES:—American Forestry Association.—III 379
NOTES 380
ILLUSTRATIONS:—Pear-tree, showing galleries made by borers, Fig. 60 373
Indigofera decora alba, Fig. 61 375

The Element of Beauty in City Parks.

THE somewhat pretentious new bridge which has been built over the Harlem River at the point where the old McComb's Dam Bridge once spanned it, is soon to be opened for traffic, and at a meeting of the Park Board last week it was agreed to buy a few acres of land at its northern extremity so as to provide for the structure something in the way of a park-like approach. If this land were properly treated it would make an appropriate addition to a public work of such magnitude, but, so far as the reports of the meeting show, no step was taken to insure such treatment—that is, the public is not informed that the matter was referred to the landscape-architect for any suggestion or advice. It is to be hoped, however, that the Board will in this case follow the natural order of business and refer the matter to their official adviser, who, after making a careful study of the land and deciding on a general scheme of treatment, can mark out its proper boundaries and give intelligent reasons for his choice. It would hardly seem possible for a Park Board to pursue any other course, but, judging from the prevailing practice of our present officials, they will seize such territory as they imagine they can take care of, and after outlining, in a haphazard way, its limits, they will begin to blast and dig without any clear or intelligent conception of what they propose to do or how the work will ultimately appear. Under such handling all the money expended on the new park is likely to be wasted, and instead of beautifying the neighborhood and dignifying the approach to the bridge, it will be an eyesore and an offense to good taste for all time to come.

It will be remembered that in the case of the Harlem Driveway, which begins near this bridge, the commissioners assumed to take the matter into their own hands, though there is not one of them who is suspected of possessing any original aptitude or experience in this direction, and not one whose judgment on any of the questions involved would have the slightest value. They simply took a strip so many feet wide, and after ordering an engineer to lay down a road gave out the contract. Every newspaper in the city and every association connected with art at once remonstrated against such barbaric treatment of two or three miles of the city's water-front. It was calmly replied to these remonstrances that a landscape-architect would be employed when the proper time came. Of course, the time for study is at the outset and in the preparation of a design, and the representatives of any civilized city would naturally have referred the whole subject to a skilled park-maker, especially if there were such a one in their employ, and this official would then have made a careful survey of the ground, with a study of its special features and surroundings. He would have worked out a plan, marked the boundaries of the land required, making it wider here and narrower there, as the situation demanded, with a definite purpose not only to make a good driveway, but to accommodate the throngs of people who would be there on festal occasions, to devise ways for crossing the road and for preventing congestion at certain points, and to furnish facilities for the enjoyment of the animated spectacle which will hereafter be presented both on the river and on the road. All this would have been carried out in the most practical way, and yet with a constant purpose to develop the pleasing picture in the artist's mind which was to be realized in the construction. The Park Board, however, began to construct a pleasure-ground which was to cost millions of dollars, without trying to form any idea how it would look when completed; with no intelligent notion, in fact, how it ought to look, and with no suspicion that an artist in landscape could here conceive and execute a panorama of riverside scenery that would distinctly enhance the attractiveness and value of this part of the city. It now appears that these practical people who sneer at art, and who have given no attention to preserving or developing the natural beauties of the region, have also undertaken to carry out an impossibility in construction—that is, such a road as they have projected cannot possibly be built on the land taken for the city, and unless they can piece out their possession in some way they must whittle down the sidewalks or the wheel-track.

What may happen to the new park north of the Harlem is foreshadowed by what is going on at the southern end of the bridge, where the city already possesses some land for an approach in the shape of a triangle of which the river forms one side. Upon this little park area there is a massive pile of rock which certainly might be utilized in some way to beautify it. Just what advantage should be taken of this natural feature, and just how much of it should be allowed to remain in position, it would require some study to decide. But so far, as it appears, the landscape-architect has not been consulted in the matter, and this means that the commissioners have again assumed to design a park themselves. At least, they have ordered the rock blasted down to the level and carted away, and no one knows what they will next attempt. Every one does know, however, that a work which is meant to be an ornament to a city like New York, and which ought primarily to be a work of art, should not be undertaken without some careful design by a competent artist.

This is a matter of more than local importance. Scores of cities are securing land in these days for public purposes, and if the metropolis of the New World is willing, by its example, to assert that there is no such a thing as landscape-art, or, at least, that it is not worth considering, there is danger that the element of beauty in the design and construction of parks will be ignored elsewhere. If this notion should prevail, our city parks may have some value as breathing-places, but they will altogether miss their higher purpose, furnish no rest to the weary mind and make no appeal to our higher natures through the imagination. The work of the landscape-painter has a value because he paints scenery that he has found to be attractive, and the purchaser of his pictures desires to see with his own eyes the beautiful aspects of nature which the painter spends his life in searching for and reproducing. As civilization advances, men of liberal culture have discovered that they can enjoy the real thing as well as they do the

skillfully painted picture of it. A desire for the actual possession of beautiful scenery has therefore become one of the positive needs of modern society, and when the representatives of a great city have purchased land for public use it is an essential part of their duty to see that it is made beautiful. The landscape-architect is trained to furnish these pictures; to conceive them clearly in the first place, and then to plan for an arrangement of ground lines and surfaces, with vegetation so disposed as to produce with definiteness the results he has foreseen from the beginning.

For the credit of the city, for the benefit of its example, for the sake of art in America, it is to be hoped that the planning of this northern park approach to the new Harlem bridge will be referred at once to the landscape-architect, and that the drilling and blasting at the southern end will be suspended until he can report upon it. It would be a disaster if the same waste of money and destruction of natural beauty which are going on in the Speedway are repeated at both ends of the new Harlem bridge.

The constitutional amendment relating to state forest-lands, which we discussed last week, was passed by the convention on Friday with little opposition. The text is as follows:

The lands of the state, now owned or hereafter acquired, constituting the forest-preserve, as now fixed by law, shall be forever kept as wild forest-lands. They shall not be leased, sold or exchanged, or be taken by any corporation, public or private, nor shall the timber thereon be sold, removed or destroyed.

No doubt, the adoption of this amendment was made easier by the revelation of corruption in the administration of the forest-lands which had been made during the week by the Comptroller of the State. These revelations show that there has been fraud and bribery in the transfer of lands and much cutting of timber in the state forests, which was not only illegal, but the result of conspiracy between trespassers and public officers. The adoption of this amendment certainly demonstrates an increased interest in the subject of forestry, and it may relieve the forests from some danger. Nevertheless, we consider it a misfortune that such a provision should be imbedded as a principle in the fundamental law of the state. It assumes (1) that there is no such thing as rational and conservative forestry, or (2) that a civilized American community cannot be trusted to organize and develop any such a system of forest practice, either because our people lack the intelligence to do this in a scientific way, or because they lack the moral fibre to administer such a trust without official knavery and peculation.

Vases for Cut Flowers.

THE subject of the proper form and color of vases for cut flowers is not unworthy of consideration from an artistic point of view, especially when we see the utter neglect of the very first principles of art with which such matters are usually treated. In this, as in so many other things, we have much to learn from the Japanese, who have devoted a great deal of study to the subject, and whose refined taste long since reduced the arrangement of flowers to something like a science. We cannot expect to equal Japanese methods of treatment, because our own ideas of cut flowers as ornaments are ingrained and we can hardly hope to change them. But we can, at least, lay down some sound principles, the application of which may do something toward discarding the hideous vessels into which flowers are often put, or rather crowded. As in all applications of abstract art, fitness is the first thing to be considered. A flower-vase must be perfectly adapted to its purpose, and that purpose is, of course, to display flowers to the best advantage. Since the flowers only are objects of display and study, the material of the vase must not be such as to attract attention. Hence, cut-glass vessels and all showy patterns, whether of glass, earthenware or metal, should be avoided. For the same reason the forms of the vases should be simple and not in themselves catch the eye of the observer, excepting only as their special fitness may deserve notice. A showy vase, however exquisite in form, is wholly unfit for a flower-vase, and the more highly it is ornamented the more unfit it is.

Of course, different forms of vases will be required for different kinds of flowers. A flat, circular dish is needed for Water-lilies, and as the flowers are in this case large, the containing vessel must be ample in size, not merely to hold the flowers, but also to preserve a proper sense of proportion. Tall spikes require tall vases, which should not be cylindrical, but should be sensibly wider at the top than at the bottom. Roses and flowers with comparatively short stems require low broad vessels, flaring at the top, so as to admit of the graceful drooping which is so attractive with both leaves and flowers. Not more than four or five differently shaped flower-vases are really necessary, the types of form being either flat or low circular vessels, which may be widely fluted upon the edges to break the too great uniformity of a plain circular rim, or round vessels which spread more or less as the sides rise from the bottom and which may also be widely fluted at the top. All forms which bulge below, or which are in the smallest degree bizarre in shape, must be rejected. The old-fashioned bulb-pot, shaped like a rabbit or other animal, with growing bulbs sticking out through holes in the surface, is the type of all that is hideous. If, with the Japanese, we consider a single beautiful flower enough at a time, a narrow containing vessel may be used. The Japanese use a piece of bamboo, which, from its irregular surface, loses the stiffness of the cylindrical form. We have no bamboo to use, and imitations in glass, china or earthenware are, like all imitations, offensive to good taste. Flower-vases should always be of some opaque material, and, all things considered, good unglazed earthenware is to be preferred, only it should be impermeable to water, and not coarse in texture. It should also be without ornamentation of any kind, and of a single and uniform tint of color.

This brings us to the subject of color in general. The elementary principle is that no color should be employed for the vase which does not perfectly harmonize with the various tints of both flowers and leaves. Since we have to deal with a great variety of colors in both, some color must be chosen for the vase which will harmonize at least fairly well with all. A pure neutral gray answers best and gives a very agreeable contrast with the various shades of green in leaves and with almost all tones of flower color, while in itself not fixing the attention too strongly. Next in order of value comes pale pure buff, not inclining to orange, but its use is more limited than that of gray. Yet it contrasts very charmingly with green leaves, as, for instance, with the beautiful green of those of Rosa rugosa and with all blue flowers. Opaque white flower-vases are sometimes effective by contrast, but, as a rule, the contrasts are rather too strong, especially in the case of white glazed porcelain, and the vase itself attracts too much attention. All colored glasses are to be rejected, and white or colorless glasses are also objectionable, since, as a rule, flower-stems are unsightly. I admit that there are exceptions to this rule. Gray earthenware vessels for flowers are advertised by a prominent firm of bulb-dealers in New York. Those which the writer has seen are cylindrical, and very heavy. The gray tint is tolerably good, and there are upon the surface small figures in blue enamel, which, however, in consequence of the large size of the vessels, are not objectionable. The ware, however, is very coarse, and suitable only for hall decoration with large masses of flowers. Much success has been attained of late years in this country in the manufacture of artistic earthenware, and it is to be hoped that flower-vases will be considered of sufficient importance to command the attention of skilled designers.

Newport, R. I. *W. G.*

The Woodpecker and Bird's-eye Poplar.

AT the late meeting of the American Association for the Advancement of Science, Professor A. D. Hopkins, Entomologist of the West Virginia Experiment Station, read a paper on certain conditions of wood which result from attacks of birds and insects. The most interesting part of the paper to readers of GARDEN AND FOREST is that in which he identifies a bird as the cause of the peculiarly waved or curled quality sometimes found in the grain of Tulip Poplars, and presumably of Sugar Maple. At least, he seems to have established that the rare and beautiful condition known as Bird's-eye Poplar is caused by a succession of elevations and depressions in the annual layers of wood due to punctures in the bark made by woodpeckers. Referring to his investigations, Professor Hopkins says:

It was found that the depressions occurring in the wood beneath the bark corresponded with the punctures made by the birds in the outer bark. The portion of the living bark affected by the puncture becomes dead and dry, causing a calloused condition at the sides and at the bottom of the wound. This calloused condition pressing upon the cambium during the process of the first annual growth of wood after the wound is made causes it to be less, or, in other words, thinner, at that point than beneath the unaffected bark. This depression is followed by subsequent annual layers until sufficient new bark forms beneath the wound to insure normal condition. Thus, seventy-five or more annual layers may be sufficiently affected in this manner to show the wavy or curled condition in the surface of the wood in which they occur. It will readily be seen how a tree subjected to the attack of woodpeckers from the time it is a few inches in diameter until it has reached maturity would show this condition throughout the wood.

The economic importance of a knowledge of this fact is also apparent. If the lumber manufacturer should desire a quantity of Bird's-eye Poplar he has only to select the trees and logs, the bark of which shows the work of the woodpeckers in the greatest profusion, being reasonably certain that they will yield a greater or less quantity of lumber showing the desired condition. Whether or not every tree so affected will show the desired condition, or whether Bird's-eye Maple is caused in the same manner, I cannot say positively, but I see no reason why it should not be so. I do know that a species which appears to me to be the downy woodpecker, Dryobates (Picus) pubescens, is extremely fond of the sap of the Sugar Maple (from which Bird's-eye Maple is obtained), and that this bird often perforates the bark of this tree with innumerable holes to obtain the sap.

Entomological.

The Flat-head Pear-borer.

UP to quite a recent date the Pear-tree was that one of all our fruits which was least troubled by insect attack, its few enemies being rarely abundant and easily controlled when they did increase abnormally. In this respect it differed sharply from its ally, the Apple, which has, without exception, the greatest number of insects infesting it of all our cultivated plants.

Within the last decade the Pear has been gradually losing its exemption from insect attack, and the crop in some localities is now more endangered than any other. Of our native insects the Pear-blister mite is increasing, but may be easily controlled, and it is to foreigners that we owe most of the danger. The Pear-tree Psylla was introduced many years ago, but has, up to recent times, been confined to a few northern localities—most troublesome, perhaps, in central New York and in Connecticut. Nurseries from central New York have sent out stock containing some forms of the insect, and as a result several orchards in New Jersey, and at least one in Maryland, have been seriously injured. The probability is that at many other points the insects have been introduced, without noticeable increase as yet.

More recently the Pear-midge has been imported, and this is spreading slowly, but steadily, ruining every locality over which it extends.

During the spring of 1894 there was brought to my attention an injury to Pear-trees in Essex County, New Jersey, which is yet more serious than any of those above mentioned, since it strikes the tree itself instead of the crop, and kills it in a few years. The culprit in this instance is a native, a species of Agrilus, which has been rare heretofore, and had never been taken in New Jersey even by collectors. The injury is done by the larva, which burrows between the bark and sap-wood, always in living tissue, and makes immensely long, irregular galleries, under which the wood dies, and over which the bark cracks. When a number of these insects are working in the same tree the galleries cross or join, and the tree is girdled and dies. When a few larvæ only infest it each year the tree dies more gradually, the area available for the supply of sap being reduced from year to year. In vigorous varieties, like the Keiffer, the trees will repair damages for some time, but even these succumb at last, repairs being omitted first in the widest parts of the borings, and as the dead patches extend, reconstruction is less and less complete.

Fig. 60.—Pear-tree, showing galleries made by borers.

The illustration given herewith shows a Seckel Pear-tree at the point of branching, the bark being removed from the trunk and one of the branches to show the galleries. The tree was between five and six inches in diameter, and had been healthy and a prolific bearer until these insects attacked it. The irregularly cracked appearance of the bark, which indicates the presence of the larva, is well shown in the picture. Not only the trunks, but the branches, are attacked, even those not exceeding half an inch in diameter, and sometimes the trees die from the top, some branches going each year until all are dead. Even young trees just from the nursery become infested, and I have a small tree set out one fall, infested next summer, and dead the spring following.

A quite remarkable feature is the enormous length of the burrows, one of them, measured along all its windings, exceeding eight feet.

The larva is white, flat, the segments strongly marked and of nearly equal width, except that the thoracic segment just behind the head is greatly enlarged and almost circular. When full grown it is from one to nearly one and a half inches in length, and then bores a small chamber in the solid wood, where it changes to a pupa, and soon after to a beetle. This beetle, the product of a larva one and a half inches long, fed in a gallery eight feet in length, does not exceed three-eighths of an inch, and has a diameter scarcely more than one-sixteenth of an inch. It is cylindrical, parallel or of nearly even width throughout, and of a metallic bronze-brown color, somewhat dulled by the fine dense puncturing of the surface.

The beetle lays its eggs in June or early July; the young larva becomes evident in July, and continues feeding until the sap ceases to circulate, resumes feeding as soon as the tree begins to thrive, and in May or June becomes full grown. There is, apparently, some irregularity in the development, because I found mature beetles early in June, and late in July found larvæ that were not yet full grown when the little ones of the new brood were already beginning their work of destruction.

There is some doubt of the specific identity of the insect, only one sex having been obtained; but it will probably prove to be Agrilus acutipennis.

Concerning remedies it is as yet impossible to speak definitely, because the feeding habits of the beetle have not been observed.

Rutgers College. *John B. Smith.*

Foreign Correspondence.

London Letter.

Vellozia elegans.—Mr. Endicott, in a note on this plant pulished in Garden and Forest, states that its native country is not known with certainty and that it has never been collected since its discovery. It is a native of Natal, where, undoubtedly, wild specimens of it were collected by Cooper, by Gerrard, and more recently by Mr. Medley Wood. Some notes on the cultivated Vellozias and their allies, the Barbacenias, will be found in Garden and Forest (vol. iv., page 77).

Lilium Lowii magnificum.—One of the most distinct and pleasing of the newer Indian species of Lilium is L. Lowii, which was introduced in 1891, when I noted it in Garden and Forest (page 352). It is related to L. Nepalense, along with which and L. sulphureum it is found wild in Upper Burma, differing from that species, however, in its less reflexed flower-segments, which form a wide bell and are white, with a few pale purple spots on the inside. The variety now in flower in the Clapton nurseries has a nodding flower three inches across, white, thickly spotted and blotched with dull crimson, suggesting in its marking the flower of Maxillaria Sanderiana. It is to be hoped that the possessors of these new and beautiful Lilies will look after their seeds and work up a stock of plants for distribution. It cannot be too widely known that nearly every Lilium ripens seeds freely, and flowering bulbs can be raised from them easily in from two to four years.

New Orchids.—The following new Orchids were exhibited at the meeting of the Royal Horticultural Society held last Tuesday:

Cattleya Kilnastiana: This is a hybrid between C. aurea and C. speciosissima, both of them forms of the labiata section of the genus. The plant shown had sturdy pseudobulbs and leaves, and the raceme bore two flowers with narrow pale rose-colored sepals, the petals broad, wavy, rose-lilac, with paler veinings, and the lip large, crisped and wavy, purple-red, with a large patch of golden yellow veined with white, the margin being lilac. It is difficult to describe the colors, but they are decidedly handsome, and the hybrid may be reckoned among the best raised by its exhibitors, Messrs. F. Sander & Co.

Cypripedium J. H. Veitch: The parents of this fine hybrid are C. Stonei platytœnium and C. Curtisii. It is in the way of C. Morganiæ, but the flowers are larger and the shades of color slightly different. The most striking features of both parents are to be seen in the hybrid, which is certain to become a favorite with admirers of big-flowered Cypripediums. It was raised by Messrs. J. Veitch & Sons.

Habenaria Susannæ: Messrs. F. Sander & Co. introduced this plant last year, and they now have it in flower. It is an old, though long lost, garden-plant, for it was in cultivation sixty years ago, when a picture of it was published in the *Botanical Magazine* under the name of H. gigantea. It has fleshy green ovate leaves and a stem two feet or more long, bearing at the top a few large fragrant white flowers, in which the segments are spreading, the dorsal sepal broad and the side lobes of the lip deeply divided and comb-like. It is a native of various parts of India and China.

Lælia Oweniæ, a supposed natural hybrid in the way of L. Perrini, bearing a spike of seven handsome dark rose-red flowers, the lip not unlike that of L. Perrini, was awarded a certificate. L. elegans has been suggested as the other parent.

Lycoris aurea is a plant which ought to become as great a favorite in the garden as the Scarboro Lily, Vallota purpurea, or the Guernsey Lily, Nerine sarniensis. It is a much more ornamental plant than is supposed; indeed, until the bulbs lately received from Hong Kong flowered at Kew I had no idea of its great beauty. The secret is, of course, in the proper cultivation of the bulbs already referred to by me in a recent letter, and I believe if bulb-growers in the southern states would grow this plant in quantity and ship the bulbs annually to the north to flower in autumn they would do themselves and horticulture generally a good turn. Bulbs received at Kew three weeks ago and potted, three in a five-inch pot, are now a beautiful picture, the stout scapes a foot or more long, each bearing a large umbel of flowers, like Nerines, but very much larger than the largest, and the color deep yellow, with a lustre like a new English sovereign. This is the handsomest bulb in flower with us now.

Rose Crimson Rambler.—The behavior of this plant has been highly satisfactory this year, the comparatively wet and sunless weather having in no wise interfered with its free growth nor affected the display of flower, except possibly to increase it. In some gardens the shoots have grown ten feet in length and they have been sheaves of bright crimson flowers for the past month or more. It is a Rose for the million, and as it grows freely on its own roots, is easily propagated from cuttings and is not particular in regard to soil, it is sure to become common.

Spiræa Anthony Waterer is another star plant. We have a bed of it at Kew, and it attracts everybody's attention, the flowers being a rich crimson color, in large corymbs and borne thickly on the plants, which, although not exceeding a foot in height, have flowered freely and continuously since the beginning of summer. Mr. Waterer says it is as good in its way as a bedding Geranium, and some people would say it is better.

Fuchsias as Bedders.—Three of the most attractive beds on the large lawns at Kew are filled entirely with Fuchsias corallina, gracilis and globosa, each with a bed to itself. In another part of the garden there is a series of beds filled with a mixture of garden Fuchsias, and although these are good to look at they are less pleasing in effect than these three beds of the tall, graceful, dark-flowered species mentioned. Simple arrangements such as this are preferable to the mixed bedding which used to prevail here, and although many visitors compare the simple method of bedding at Kew unfavorably with the more complicated arrangements at Hampton Court and other popular resorts, people of taste prefer the one plant to each bed arrangement which predominates at Kew. The Fuchsias are admirable for the purpose as they soon furnish the beds and they flower freely all through the summer.

BOUVARDIAS AS BEDDERS.—These have been tried at Kew for the first time this year and they are a decided success, notwithstanding the unfavorableness of the weather we have had. Probably they are largely used for outdoor gardening in America, but if they are not, then permit me to recommend them as being in every way suitable. I have seen them in the south of France where they form big bushes in a single season and flower most profusely. Generally here they are grown in pots under glass, and very useful they prove when well managed. But they are first-rate in the open border, the plants branching freely and flowering well and continuously. The best red we have is President Cleveland, probably the finest Bouvardia ever raised; Maiden's Blush is the best of the pinks, and the best white is Humboldtii. Another delightful sort is the small B. splendens, which forms a globose little bush a foot across and flowers all over like a Lobelia.

London. *W. Watson.*

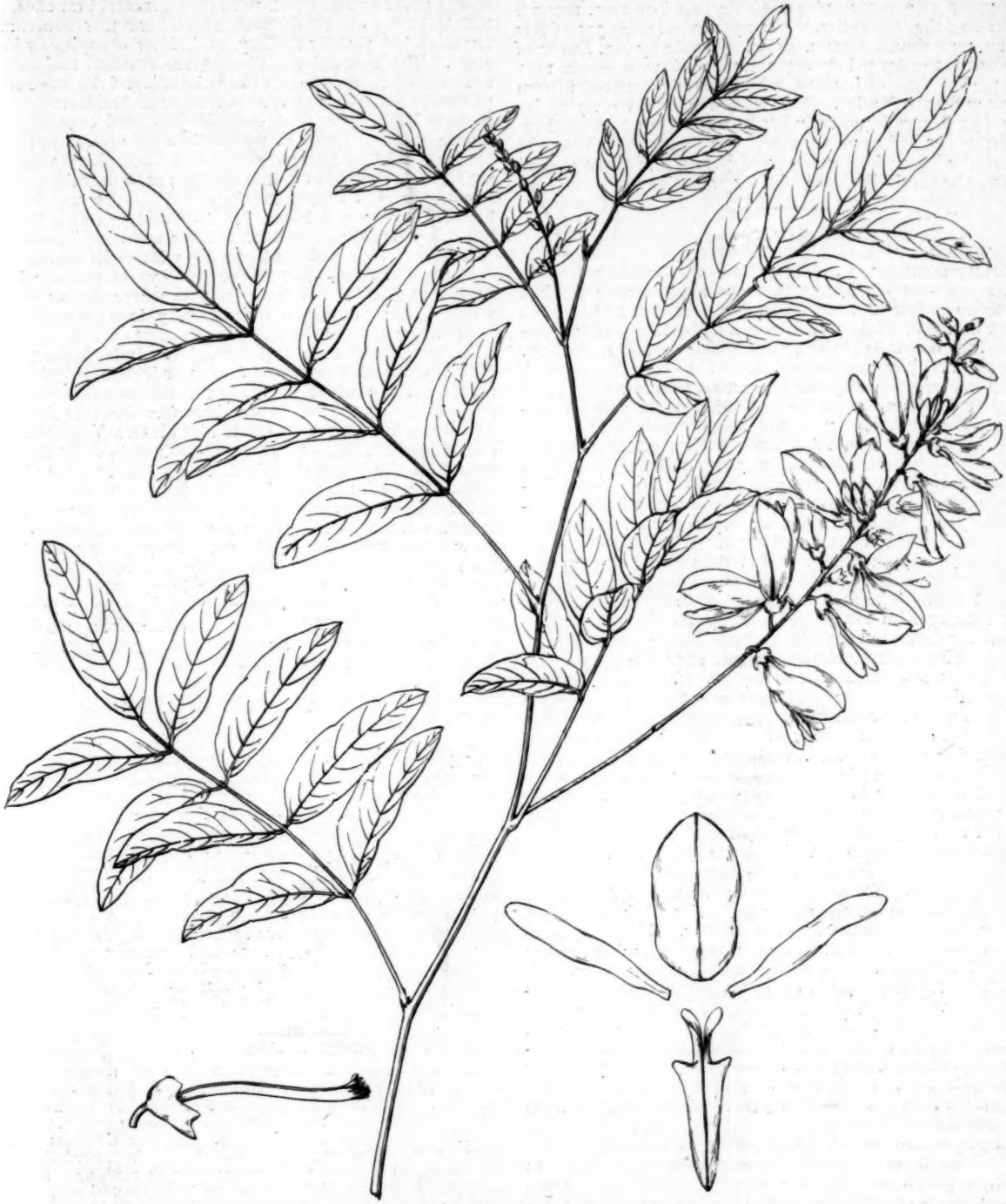

Fig. 61.—Indigotera decora alba.—See page 376.

New or Little-known Plants.

Indigofera decora alba.

THIS hardy Chinese herbaceous plant was described on page 266 of the present volume of this journal. Its value as a garden-plant is so great, however, that we have had the illustration which appears on page 375 of this issue reproduced from a drawing made by Mr. Faxon of a plant in the Arnold Arboretum, where it was sent in 1885 by the Veitches, of London, who probably received it from their collector Maries. The white-flowered variety of Indigofera decora is perfectly hardy, and in our climate there is no neater herbaceous plant or one that is more beautiful when the long white racemes of pure white flowers stand above the shrub-like head of clear green leaves.

Plant Notes.

CLEMATIS PANICULATA.—This plant has been praised in these pages so persistently that our readers may think it needs no further commendation, but no one can see a good plant in flower without admiring it and without feeling impelled to sound its praises, and just now it is at its best. The plant is by no means new, since Thunberg discovered it more than a hundred years ago, and it was introduced into English gardens before the beginning of the present century. For some reason it was never much heard of in English gardens, nor in American gardens either, although it was probably introduced here thirty years ago, at least, by Thomas Hogg, through the Parsons Nurseries. Perhaps one reason for its slow recognition is that seeds sometimes ripen imperfectly here, and when sown in the spring they do not often start for a year. When sown in the autumn as soon as they are ripe they begin to come up the next spring, but do not make flowering plants until the second year. The real popularity of the plant began in this country with Mr. Orpet's happy thought of grafting it on our common native Virgin's Bower and Clematis stans. The stock gives the plant an immediate start, and it will grow several feet the first year. If, in transplanting, the junction of the stock and cion is set under the ground the graft will throw out its thong-like roots at once, so that the root of the stock is soon of little use. We have already figured the plant in vol. iii., and have reproduced a photograph of a plant in bloom, and little needs to be said in the way of describing it. Its ivory-white flowers appear in long panicles late in August and continue to open for a month, and they are borne in such wild profusion that the plant becomes a mass of white above, while the lower part of the vine is well furnished with large lustrous and almost leathery leaves. These flowers are followed by heads of fruit, which have long plumose tails of a reddish tint and are almost as ornamental as the flowers. The foliage remains green until late in autumn, and in November or early winter it turns to a mass of bronze or copper color, over which the feathery tufts of the seeds hover in a most graceful manner. The plant is perfectly hardy and starts very early in the spring. Altogether it is one of the very best of ornamental climbers for porches and similar situations, and where it can run wild over the shrubbery it is as much at home as our native Virgin's Bower.

LESPEDEZA SIEBOLDII.—This plant was introduced from Japan some thirty years ago under the name of Desmodium penduliflorum, and as it appears at this season it is one of the most graceful of hardy herbaceous plants in habit, making a truly beautiful combination of flowers and foliage. It is really herbaceous, but it has a shrub-like appearance, with stout pithy stems from three to six feet high, which die down to the crown every winter. As the roots increase in size, the stems increase in number every year, until the plant forms a large clump. These stems are covered with a minute pubescence which gives them a distinct silvery appearance near the top, and each one is terminated by an ample cluster of showy purple pea-shaped flowers, which is made up of many racemes, from two to six inches long, springing from the axils of the leaves. The plant has also been called Lespedeza bicolor, which name really belongs to a hardy slender-leaved shrub from north-eastern Asia, which grows to a height of six or eight feet, with long graceful branches, trifoliate leaves on slender petioles, and racemes sometimes terminal, but usually axillary, and either drooping or half-erect. The rose-colored flowers are smaller, and not of such a deep color as those of L. Sieboldii, and the large compound racemes are not so dense and handsome. The flowers begin to appear early in July, and expand for a month, while those of L. Sieboldii do not appear until the seeds of L. bicolor are ripe. Both of these plants were described and figured in vol. iv., page 112, where the tangled synonomy was first unraveled. In hot dry weather L. Sieboldii sometimes has a habit of folding up its leaves, but this year the plants seem to have endured the drought remarkably well, and are flowering with great vigor.

BEGONIA VERNON.—For two or three years past we have spoken of this Begonia, a plant of the semperflorens group, with bright red flowers and firm glossy deep-green foliage, with a bronze or blood-stained tinge which endures without fading in the full sunshine. Indeed, the plants only assume their best form and color in a sunny border, and in such a position the finely tinted leaves do not scorch even on the margin. It is small wonder that this Begonia, which was originally distributed by Messrs. Vilmorin, has so quickly taken a place among bedding-plants of the first rank. In the admirable herbaceous border around the foundation of the Arsenal building in Central Park masses of these plants are very effective. They do not grow tall, and those on the edge of the mass flower close to the turf as they grow away from their neighbors. They grow so quickly from seed that they may practically be treated as annuals, and they flower freely all summer long. Altogether they make a most attractive bed, with enough color to make it striking, while the dark and abundant foliage subdues the tone, so that there is nothing glaring or obtrusive in the general effect.

Cultural Department.

Seasonable Work.

WE are passing through a period of unparalleled drought in this section and it has been a difficult matter to keep plants alive. When rain comes it will probably be abundant, but the planting season will be a short one this fall, and all preparations should be made for it, so that no delays may occur after the needed rainfall. It is useless to lift plants or trees when the soil is so dry that it will not stay on the roots, and it is likewise useless to plant in dry soil, even if it is watered after planting, for it is difficult to soak a dry, parched soil, especially after it has been disturbed. A year ago we transplanted a large number of evergreens at this season, with such satisfactory results that we shall hereafter move any of the hardy trees and shrubs, especially the Conifers, in autumn. Magnolias are best moved in spring, as are also Rhododendrons, though we are preparing the beds for these now that there may be no delay in spring when the plants arrive. For the Rhododendrons we are using soil from a piece of intervale land that was formerly submerged; it is of a black peaty nature and was laid up some years ago when drains were cut through, and is, therefore, well sweetened by exposure to the weather. With the addition of leaf-soil and the natural loam this will make a good soil for the finer-rooting shrubs, such as Rhododendrons and Kalmias. All the Conifers like a strong soil, with plenty of manure added; the latter heightens the color and induces vigorous growth as nothing else will, provided there is sufficient moisture in the natural soil.

The planting of herbaceous plants in autumn is equally important, and the soil should be prepared for them at once. As these are to remain permanently they need liberal treatment to insure good results for a long time to come. If the location is a poor one, and the natural soil lacking in depth or moisture, it is well to prepare the place by digging double the usual depth and mixing in, as the work proceeds, plenty of manure and good soil. Perhaps readers may tire of this constant insistence upon the necessity of furnishing the roots of

plants with abundant food in such a form and under such conditions that it is readily available for their use, but this is the only way to get any comfort out of a garden. No matter how rare or costly or beautiful a plant is, its first charm is that of vigorous health, and when starved and stunted it can never be anything other than an object of commiseration. A few plants well fed and well cared for will prove far more satisfactory in the end than ten times as many carelessly handled. Our greatest trouble here is from the encroaching roots of large Elms which grow near the borders. Sometimes we have to lift all the plants in the large borders and cut off the Elm feeders which spread throughout the bed. This has to be done at least every two years to be of any service, and the border-plants have only time to get established before it is necessary to lift them again. A rule to be rigidly remembered is, never to plant a border of flowering plants near Elm-trees, or, indeed, any other large trees, for there is sure to be injury to the plants sooner or later.

Bulbs may be planted now, and Lilies especially should be put into the ground at once, so that the set of roots made in fall may become well established. Lilies are never inactive, but soon after flowering is the most suitable time for transplanting, since directly after the flowers fade a new set of roots is sent out from the base of the bulbs, and on these depends the strong growth that is to produce flowers the next year. If planting is delayed until spring the bulbs have a double task to perform—that of getting established and of maturing the flowers; bad results are more likely to be seen the second year after planting than the first. American-grown bulbs are preferable to those grown in Holland, where the growers lift the Lilies and subject them to a system of drying before shipping. The effect of this treatment is seen in the pink tint the bulbs usually have on arrival here, and with every particle of the roots cut off many bulbs die before getting established. The Japanese know their business better, and encase each bulb in a clay covering; they are then closely packed with dry soil sifted in between. Japanese bulbs come here in fine order, often with a mass of live roots ready to start into growth as soon as they are planted, and losses are thus reduced to a minimum.

Those who intend to plant permanent beds of Tulips should now prepare places for them. The new Darwin Tulips are a decided acquisition to the garden, perfectly hardy, of rich coloring, having stout stems for cutting, and they will flower year after year. The Parrot varieties are also admirable in the border, but are not so good for cutting, owing to their weak stems; the colors are brilliant, with unique and fantastic shapes. Our Parrot Tulips have flowered for three years in the same bed without disturbance, and promise to do equally well next season.

South Lancaster, Mass. *E. O. Orpet.*

Dutch Bulbs.

THERE is no commonplace annual garden task more satisfactory than the planting out or potting at this season of the Dutch bulbs, which are now at hand. These are bulbs of few families, indeed, but of infinite variety of form and coloring, many of dazzling splendor. They flower, too, at a season when bright flowers are most acceptable. Even the readers of horticultural journals sometimes neglect their opportunities, and it seems well to remind the negligent that now, and not spring-time, is the season for planting Hyacinths, Tulips, Daffodils, Crocuses, Scillas, Snowdrops, Snowflakes, bulbous Irises, etc. With no other material can we secure such a wealth of charming flowers with so little trouble and such slight expenditure, while all of those mentioned are hardy, and if not forced will increase from year to year. Still, it is not well to depend on old Hyacinths and Tulips, grown even in the open, under ordinary conditions. Additions should be made each year to the stock of these, for they usually degenerate unless carefully cultivated.

As to planting bulb beds, while a mass of color is always enjoyable in the spring-time, it does not seem to me worth while to plant on the system so popular with the makers of catalogues. Such beds will, perhaps, answer in public parks, where systematic plans must often be followed from exigencies of labor, even if results are not of the best. To copy park effects in a private garden is on a par with garnishing one's table on the plan of the restaurant. There is also a practical objection to planting a bed with only one variety of bulbs—that is, its beauty passes too quickly. In the case of Tulips, a bed is often ruined at once by a hard shower or a very warm day. Still, these things are a matter of taste, and the owner of the bulbs may fancy monotony and a glaring mass of color. My fancy is for informal plantings of various bulbs, and my usual practice is to set out first any special clumps of species or varieties which, for some reason, it is desired to keep in masses. The smaller-flowered bulbs, of course, are placed toward the front. After the special features of the bed are adjusted, the various Tulips are all mixed together—Single Early, Double, Byblooms, Bizarres, Breeders and Parrots—and first scattered over vacant places, and then thickly planted where they happen to lie. A bed of this kind, while never a perfect dazzle during any one day, provides a long changeable succession of flowers.

But, before these bulbs flower, the potted bulbs will have provided the amateur with a long succession of blooms. With a good supply of potted bulbs, a few winter-flowering Begonias, a supply of Primula obconica and a few Ferns the conservatory or window-garden may be kept gay from December till spring-time. The details are in every fall catalogue, but it may be added that the flat pans, say, eight inches wide by four inches deep, provide usually the most satisfactory receptacles for flowering all the medium and larger sized bulbs. These pots are more sightly than the deeper ones, and hold sufficient earth. A pot of this size will hold four first-size Hyacinths, or six Roman Hyacinths or Tulips or Daffodils.

Elizabeth, N. J. *J. N. Gerard.*

Crinum Moorei.

THE Natal Lily is one of the choicest of the bulbs which flower at this season. Though introduced more than twenty years since, and rapidly increased by offsets, it does not seem to be as yet common in gardens. The treatment required for the bulb is about that ordinarily given to the popular Agapanthus, and if it were as well known it would be in greater demand than this old favorite. It should be potted in good open soil and grown with as infrequent disturbance of the root as possible. It should be well watered and fertilized when growing and flowering, and in winter it may be rested in a moderate temperature without being allowed to become dry. The pleasantly fragrant flowers are large, the perianth segments being three inches long, and borne in succession to the number of from six to twelve on strong scapes three feet high. The flowers are white or pink. The former variety is still rare, or, at least, scarce, but the pink variety is very beautiful with a very clear pure color, and a touch of green at the bottom of the somewhat curved tube. The leaves are broad, rather soft, and easily injured. In this climate it will be well to keep it under cover till the season's growth is completed. After this the pot may be plunged in the open till the flowers are formed, and after, if it is desired to bloom the plant out-of-doors.

Crinum Moorei seems to be a half-hardy bulb, and possibly may be wintered out in a protected border south of this latitude. Here C. longifolium (C. Capense) is hardy when fully exposed, and I have wintered out C. Powelli without protection under the south wall of the house. C. longifolium does not seem to me especially valuable as an ornamental hardy garden-plant. Its leaves start early enough to be injured by frosts, and do not recover their sightliness. The white flowers are fairly good, but a Funkia is more effective, and produces more abundant flowers of similar size and color. C. Powelli is a hybrid between C. longifolium and C. Moorei, and seems to be hardy in such climates as prevail in the south of England. It may not prove to be satisfactory here outside, even in a sheltered place, and it seems only worth while trying the experiment in the hope of establishing a clump where it may have free root-run and produce noble leaves and many flowering stems. The safest culture would undoubtedly be in a deep pot or tub, which could be removed to shelter in winter. There are some eighty or more species of Crinums and several hybrids. They offer a wide and interesting field to the collector, but C. Moorei and C. Powelli, with their varieties, are the handsomest of the family, and should be the first ones secured.

Elizabeth, N. J. *J. N. Gerard.*

Jelly Fruits.

THERE are few apples so likely to glut the market in a good bearing year as the Red Astrachan, but there is a way to dispose of the surplus—that is, they can be made into jelly. These apples are, by all odds, preferable to any of the crabs for this purpose, and make one of the very best of all sour jellies. It is an advantage, too, that the choicest fruit is not required for this preserve.

The wild gooseberry is not generally known to be of any special value except for marmalade. It does, however, make a jelly far preferable to that made of cultivated sorts. The

flavor is unique and spicy, and is pronounced by all who have eaten it to be next in quality to currant jelly.

In New England, where the Barberry grows very freely along the roadsides, its berries are used largely for preserves and jellies; but in other parts of the country their value is little known. It is said that dyspeptics can eat this preserve with impunity. The common Old World species, Berberis vulgaris, is now growing wild in the middle and New England states, and is preferable for beauty and use.

The healthfulness of the cranberry seems to be generally known, and its enormous consumption as a food shows how generally it is relished, but it is rarely used for a jelly so far as I have known, and yet it ranks very high for this purpose.

Quince jelly our mothers knew to be a luxury only to be brought out for the clergyman and select visitors, but very few persons in the United States know the excellent quality of jelly made of the Japan Quince, Cydonia Japonica. Many of the scarlet-flowering sorts bear no fruit, or very little, but there are varieties with white or flesh-colored flowers that bear abundantly. Some individual plants are very prolific. The jelly is very rich and nutritious. The fruit has an oily flavor, which goes over to the preserve.

Clinton, N. Y. *E. P. Powell.*

Bush Lima Beans.—I agree with your correspondent in what was said of Henderson's Bush Lima, on page 347. It is distinctly earlier, and that is a great point in its favor, both for commercial and private gardens. This year, too, it has proved that it can endure drought better than any of its rivals, while its productiveness and persistence in bearing are both remarkable. When, however, your correspondent states that it is somewhat inferior in flavor to other Limas, he makes an admission which will condemn its exclusive cultivation in the home garden. In vegetables for the home table the best is never too good, and if there is a bean which is richer in quality no family in the country should be satisfied without a supply of the superior one. I believe that Henderson's Bush Lima is not a true Lima, but a Sieva Bean, and while these are excellent in flavor, they lack the very highest quality which is furnished by Burpee's Bush Lima. These large, fat beans, when served, are much more attractive in appearance than the Sievas, and beauty has its use on the table as well as elsewhere. In the final test of quality, their flavor and buttery consistence are unrivaled. I shall plant Henderson's Bush Lima because it gives me an excellent bean early in the season, but I cannot dispense with Burpee's Lima for late table use.

Flatbush, L. I. *Quis.*

Muskmelon Emerald Gem.—This seems to be the best melon for home use in every particular, except size. It is thin-skinned, with deep salmon-colored flesh and a small seed cavity. Its outer skin is green, beautifully netted, and it is slightly ribbed. Its flavor is delicious, its flesh-texture of the very finest, and it has that melting quality which is only found in melons of the very highest quality.

Hackensack, N. J. *R. A.*

Lilium sulphureum.—This handsome Lily, first distributed as L. Wallachianum superbum, has as yet not been very plentiful, but it is so rapidly increased that it should soon be more common. It bears bulblets freely in the axils of its leaves, and if these bulblets are at this time set in moist earth they quickly put forth roots and grow away rapidly. It appears that if they are dried off and not planted till later they either germinate slowly or not at all.

Newark, N. J *G.*

Old Varieties of Apples.—Few of the newer sorts of winter apples surpass in quality and other favorable points the old Roxbury Russet. Those who are planting large orchards would do well to consider it. The tree is a rapid grower and of a spreading habit. I have specimens, however, grafted high that reach a height of thirty-five feet. The limbs are strong but somewhat brittle, and care must be used not to have the trees injured with ladders. The crops are annual and abundant, and, what we must consider of great importance, the fruit keeps all winter and keeps well. As for quality, we have nothing to surpass it for baking, and few to surpass it for cooking. These russets should be picked rather late and stored at once in a cool, moist cellar, unless shipped. With me the two best-keeping apples are the Kirkland and the Roxbury Russet. I have been pleased and surprised to find the demand increasing for the old Black Bellefleur. This, when grown in very open orchards, is not the dry and mealy object that it is supposed by many to be, but is yellow-fleshed and juicy. The market demand is not strong enough to place it on a par with Northern Spy and Baldwin, but the increased demand for it warrants the planter in including the Bellefleur among profitable sorts. A third of the old apples that deserve renewed attention is the Westfield Seek-no-further. The quality of the apple is very good for the table, and it ranks with the preceding among those who like fruit with mild and not too acid flavor. The tree is a moderate grower and shapely, while the fruit is almost always peculiarly fair. When apples in general fail we count on having Seek-no-furthers in good form.

Clinton, N. Y. *E. P. P.*

Correspondence.

United States Nurseries, Short Hills, New Jersey.

To the Editor of Garden and Forest:

Sir,—A casual visitor to this large establishment always finds much to excite his interest, not only in the abundance of plants, but in their admirable arrangement, healthy appearance, and the general cleanness and order of the place. I did not expect to find early in September many flowering plants under glass, and it will be nearly two months before the Chrysanthemums, for which this house is famous, will be at their best. Plants trained to single stems and specimens in pots were, however, in excellent condition for coming exhibitions. The great block of houses devoted to Palms, Ferns and other foliage-plants were filled to repletion, the more common Palms, like Phœnix, Latania, Areca, Kentia and Cocos, being grown by the thousand. Among the less common species I observed a fine lot of Acanthaphœnix crinita, a highly decorative species with the lower sides of the fronds of a silvery glaucous color and the plant generally furnished with many black spines. Pritchardia Thurstonii and Pinanga Kuhlii are likely to become favorites when they are generally known. Cocos gracilis, while scarcely as light and airy in habit as C. Weddelliana, makes a valuable plant on account of the tougher texture of its fronds.

In the large collection of Araucarias, besides the thousands of A. excelsa, were many striking varieties—among them, A. Baumanni and A. Cookii, with short branches, and A. excelsa glauca, with handsome silvery leaves. Among the Ferns healthy plants of Adiantum Farleyense fill two large houses and part of a third. The variety plumosa of Nephrolepis exaltata appears to be one of the most beautiful Ferns in cultivation. The variety Smithiana of Pteris tremula and Smithiana densa are beautiful and promising novelties.

Passing by the magnificent specimens of arborescent and other stately Ferns like the Alsophilas, Cibotiums, Dicksonias and Cyatheas, I noted among miscellaneous foliage-plants the following desirable novelties: Hoffmannia variegata, Margravia paradoxica, the very distinct Peperomia metallica, the variety striata of Heliconia aurea and two Tradescantias, T. regina and T. elongata, both of which are improvements on existing varieties. Strobilanthus Dyeriana, sent out last spring from England, filled two or three sashes in one of the frames exposed to the full sun and without any glass to protect them. Under these conditions the growth was beautifully colored, and the plants seemed destined to wide use for bedding purposes. Phrynium variegatum was also flourishing in the open and was finely variegated, while coddled plants in a heavy shaded stove show little color. I have observed this plant used with good effect in window-boxes this year, and it ought to prove useful in subtropical bedding. A variegated form of Oleander splendens is a plant which will prove very effective in a large pot or tub. Souvenir de Bon is a decided acquisition among Abutilons. Its leaves have a white variegation encircling the green. Cyperus laxus is another variegated plant which will make a good companion to C. alternifolius. Among many Rex Begonias lately introduced, but not in commerce, I noticed as particularly interesting Bertha McGregor, Kaiser Wilhelm, Elsie Coles, Dr. James and Walter Laing. Among Dracænas, D. Annerleyensis and D. Norwoodiensis were two of the best. D. Neo-Caledonica is a useful species on account of its leaves and hardy qualities. Its color is a dark green-purple at the base and at the extreme margin, and pink on the young foliage.

Orchids, which are known as one of the commanding features here, are seen in almost numberless variety, and the visitor will find hardly a sickly plant in the entire lot. Thousands of plants of Odontoglossum crispum were in most vigorous health, with Cattleyas, Cœlogynes, Lælias, Dendrobiums and the other large genera all represented by immense numbers of sturdy specimens. The collection of Cypripediums, which is well known as unexcelled in number and

variety, and the thousands of seedlings in various stages of growth are well worth study. September is not a month when one expects to find many Orchids in bloom, but among the Cypripediums I noted in flower C. gigas, C. Charlesworthii, C. Io, C. Io grande, C. Parishii, C. Schomburgkianum, C. Dayanum, C. supercialiare ornatum, C. Œnanthus superbum, C. Allanianum and C. niveum. Hundreds of plants of Dendrobium grande were in flower or bud, while of the few Cattleyas in bloom C. Chrysotoxa was the best. The so-called Toothbrush Orchid, Dendrobium secundum, was showing numerous small yellow flowers, while Oncidium incurvum and O. ornithorhynchum were in good bloom.

In several acres of ground devoted to hardy perennials the plants were suffering severely from the long-continued drought, and few varieties were blooming to satisfaction, although there was much to admire among the different kinds of Helianthus, Hibiscus, Phlox paniculata, Liatris, Boltonia asteroides, Platycodon, Statice, Sedum, Delphinium Sinense and D. formosum. A variegated variety of Ajuga reptans, which grows from two to three inches high, with a white zone enclosing a green centre, is a hardy plant of rapid growth, and since it is easily propagated it ought to be very effective for carpet-bedding and for the garden.

Taunton, Mass. *W. N. Craig.*

Meetings of Societies.

American Forestry Association.—III.

FOREST-FIRES IN SOUTH JERSEY.

MR. JOHN GIFFORD, of May's Landing, New Jersey, a member of the State Geological Survey, in a paper on this subject, described the part of the state subject to these fires as that portion extending southward from a line drawn from Long Branch to Salem, an area of some twenty-five hundred square miles. Excepting the land along the shore and in places along the rivers and railroads, this large area is an almost unbroken stretch of forest. Much of the territory, often called the Southern Interior, is in an impoverished condition, due mainly to forest-fires. The land is seldom more than 150 feet above the sea-level, and is drained by several rivers, the sources of which are all in bogs and swamps within its own borders. The burning of the woods, therefore, seriously affects the water-supply of all this region, the failing of which has recently caused much difficulty. The soil is sandy loam and gravel. Much of the land is fit for cultivation, and the rest is coarse white sand mixed with small quartz pebbles. Broad stretches of territory would be deserts of shifting sand were it not for the trees which hold it in place, and these plains should be left permanently wooded.

On the upland the Oak and Pine, mainly Pinus rigida, are cut for cord-wood, and on the lowlands or "islands" in the swamp excellent timber is furnished by these same trees when they escape injury by forest-fires. White Cedar is the most valuable wood in south Jersey for lumber, but, owing to the forest-fires and an increasing demand for it, it is becoming scarce, and the bottoms, where this tree once grew abundantly, and which are natural reservoirs for water, are now usually turned into Cranberry-bogs when suitably located. The so-called swamp-forests consist mainly of a dense growth of Sour Gum, Swamp Maple, Pitch Pine, Magnolia (M. glauca), Liquidambar, Oaks, and occasionally trees of other species. Owing to difficulties in getting out the timber, the swamp-forests are seldom cut. Marsh-lands, sometimes called savanna-lands, are at present worthless. These are covered with low bushes, grass and a few straggling trees. It is believed by many that when forest-fires are stopped these marsh-lands can readily be seeded, and that they will support a growth of White Cedar, which will do much toward increasing and regulating the supply of water.

There is scarcely a square mile in the southern interior of New Jersey which has not been burnt over by forest-fires during the past five years, and the fires this year were more destructive than in any preceding years. These forest-fires are mainly set in one of four ways: 1, by incendiaries; 2, by locomotives; 3, by careless brush-burners; 4, by lightning. The fires set by locomotives can be prevented by the use of a spark-arrester; by having places especially prepared for the dumping of hot coals and by clearing and plowing the land along the railway. Often, however, to produce a better draft, the arrester is withdrawn or holes are made in it, and hot coals are carelessly dumped where they quickly generate a fire. As evidence that fires can be prevented by observing the above precautions, Mr. Gifford stated the fact that while the officials of a railroad in that part of the state were the owners of woodland bordering the track not a single fire was set.

The land along the railroads has been burned to such an extent that there is little danger of a fire gaining much headway there now. The most serious danger is from lawless men who kindle forest-fires to hide their thefts of timber. The worst fire of this season, supposed to have been deliberately started, burned over 60,000 acres, besides destroying several houses, and a fire near McKeetown destroyed woodland growth on 12,000 acres. The latter fire escaped from a workman who was burning brush. A large foreign element has come to south Jersey to clear farms, and this considerably increases the danger of fires from burning brush. On the other hand, sections of cleared land serve to check the headway of a fire.

Young timber is usually killed to the ground by forest-fires. Large timber recovers, but its vitality is reduced, and the charred wood is disagreeable to handle. Only a small quantity of large timber is now standing in south Jersey, though Jersey Hard Pine was once plentiful. Ships timbered with it in 1861 are still perfectly sound. Here and there in a swamp a large Pitch Pine may still be seen. Old Heart Cedar is noted for its durability, but now for fear of destruction by fires lumbermen cut it in a sappy state when it is fit only for laths and shingles; and for fear of fire, Cedar is usually cut as soon as it is big enough for rails or even hoop-poles. The shoots which spring from the roots of burnt Oak were used for hoop-poles a few years ago, but now, owing to the substitution of bags for barrels and iron for wooden hoops, there is practically no demand for them.

The desolation of this country is mainly caused by forest-fires which have swept over it for many years. When a fire passes over a scrubby growth on sandy soil it not only burns the leaves and wood, but even devours the organic matter in the surface soil. The soil becomes scorchingly hot, and the ashes thus produced are quickly beaten through the porous earth and nothing is left but a bed of sand and charred sticks. While only gnarled and stunted Oaks and Pine survive on land repeatedly burned over, very large Tulip-trees and Beeches are not uncommon on islands in the swamps. Fire is especially destructive to Cedar, for not only does it ruin the standing timber, but it burns deep down into the bottom. Cranberry bogs, which are usually located on Cedar swamp-bottoms, are also much injured by fire. It is necessary to dig deep trenches to check its course, since it burns several feet into the peat and appears here and there in unexpected places several yards away.

A careful estimate places the number of acres of woodland in New Jersey burnt over during the past six months at 200,000, including many houses and other buildings, bogs, swamps and corded wood. Besides this, the consequential damages are much greater. When fire is discovered, the owner of the land, if he happens to be near, gathers together a few men and hastens to fight it. If it has gained much headway he is powerless to stop it, and if by change of wind it shifts to another man's property he leaves it and no longer concerns himself about it. Men are soon exhausted with the heat and smoke and often receive little or no recompense for their work, and many land-owners claim that there is much difficulty in procuring competent men, and unskilled persons often do more damage than good. It requires cool-headedness and an accurate knowledge of the region to successfully combat a fire. By back-firing in improper places fires gain strength. In spite of the continuity of the woods a fire is more easily controlled in south Jersey than in a mountainous country. Roads are excellent points of vantage, and if properly trimmed are generally sufficient to check fire. If the wind is high the sparks are often carried long distances, and fires themselves move at a rapid rate, creating a strong draft and roaring like the ocean, but in ordinary fires a road or a stream, or even a spur of swamp, is sufficient to check their headway. It is highly important, therefore, that overseers keep the brush from the sides of the road.

A recently enacted law provides a fire-marshal, who is charged with the control of all fires occurring in his township. An observation tower and telescope give a view over almost any township in south Jersey, and the marshal is empowered, on the discovery of a fire, to employ and pay any required number of men to help in putting it out. It is believed that every fire can be checked by this means before it has gained headway. A society for the prevention of forest-destruction is now being formed which will consist mainly of land-owners, who will appoint an agent to insist upon the enforcement of the law and to see that the marshals do their work properly and that malicious fire-setters are punished.

Notes.

One of the plants of the Victoria Regia, in the Lily ponds of Messrs. Tricker & Co., Clifton, New Jersey, last week had seventeen leaves, two flowers open and seven visible buds.

The first chestnuts of the season appeared in this market last week. They came from the high lands in Ulster County, this state, where it is said there had been a frost which opened the burs.

For the first time this year the large Spanish onions are in the market. They retail at five cents each, but since there are between 60,000 and 70,000 crates now on the ocean, destined for this port, they are likely to be even cheaper.

Notwithstanding the dry weather this summer, the Scarlet Thorns are fruiting with unusual abundance in the neighborhood of this city, and many of the trees are so bright with ripened fruit now that they make a conspicuous display in roadside thickets.

We have received the leaves of a Hickory-tree which are prematurely browned in patches, and Professor Halsted identifies the trouble as a parasitic fungus, Gleosporium Caryæ, which is quite common. We recently observed three Hickories standing in a row, and so close that their branches touched. The middle tree was so badly affected that the leaves all seemed dead, while the trees on either side of it were perfectly healthy. It is possible that in such cases the affected tree may have some constitutional weakness.

The eighth annual convention of the Association of American Cemetery Superintendents was held last week in Philadelphia. The meeting was successful in point of attendance and in the character of the papers read, and it was made particularly interesting by visits to Fairmount Park, Laurel Hill and West Laurel Hill Cemeteries, and to Harleigh Cemetery, in Camden, New Jersey, which is conducted in accordance with advanced modern methods and is considered a very satisfactory work. O. C. Simonds, of Chicago, was elected President for the ensuing year; George W. Cressy, of Salem, Massachusetts, Vice-President, and Frank Eurich, of Toledo, was re-elected Secretary. The next meeting is to be held in Richmond, Virginia.

To a correspondent who inquires as to the proper amount of fertilizers to be applied to Peach-trees we can only say that different amounts are needed in different soils. In some good orchards in New Jersey one hundred and fifty pounds of muriate or sulphate of potash and three hundred pounds of ground bone to the acre are applied broadcast every year. Professor Voorhees, of the New Jersey Experiment Station, does not recommend the application of fertilizers until the trees come into bearing. This direction presupposes that good cultivation has been practiced from the beginning. Where nitrogen is not supplied by turning under Crimson Clover or some other leguminous crop, nitrate of potash is sometimes used at the rate of one hundred to one hundred and fifty pounds per acre every year.

Very rarely does one see such a rapid transformation in scenery as that which took place within three or four days after the recent rains in this vicinity. The rainfall was abundant and thoroughly soaked the hot ground, while the close, moist air which succeeded produced exactly the conditions which prevail in a propagating house, and the grass blades started from the roots with unusual energy. Four days after the rain the burned lawns of Central Park were as green as they ever were in May, and Morningside Park, where the turf had been to all appearance absolutely dead, was carpeted with tender green, even to the verge of the rocky ledges. The change strongly enforces the argument for providing a water-supply which we made last week. These public grounds could have been made to smile with the same beauty all through the long drought if adequate means for irrigation had been provided.

Two or three correspondents have written about the Morning-glory known in California as Heavenly Blue (Ipomœa rubro-cœrulea), to inquire whether it can be grown in this latitude. There seems to be no trouble about this, and although Mr. Sturtevant stated that it begins to flower late, we have seen plants in Jersey City which have been producing flowers in abundance since the 1st of September. The seed should be sown under glass in small pots in March, and the plants should be carefully hardened off before setting them out-of-doors. This should not be done until the ground is thoroughly warm—that is, not before the middle or latter part of May in this latitude. If the plants have become somewhat pot-bound they will be all the better for it. When the hot weather comes they will make a rampant growth, and soon climb up twenty feet if they have a chance, and every morning they will produce numbers of flowers of the rarest blue and from three to three and a half inches across. The rich green of the foliage of the plant and the depth and purity of the color of its flowers make it a striking object at this season.

The effect of heavy rain and wind storms in New Jersey ten days ago is seen in an oversupply of windfalls, and the lessening stock of good peaches from that state. The grades known in the trade as small, common and prime find a slow wholesale market at from thirty to seventy cents a basket, while grades known as best line and fancy range from seventy-five cents to a dollar and a half a basket, which means considerably higher prices for the retail buyer. The season for Bartlett pears is also coming to a close, and later varieties, as Anjou, Bosc, Louise Bonne and Sheldon, are now offered. Receipts of California fruits are becoming smaller, fifty-one car-loads constituting the supply in this city last week. Among some twenty distinct varieties of California peaches noted in the markets are Crawford's Late, Lemon Cling, the popular and showy Susquehanna, Ward's Late, a white peach, juicy and of rich flavor, Picquet's Late, a yellow free-stone, and George's Late, a large yellow peach, striped and splashed with bright red and counted among the best peaches for shipping. Gros, Hungarian, Kelsey, Silver and Fellenberg prunes are among the latest varieties of this fruit seen here, with Coe's Golden Drop plum, a favorite for canning.

In the branch of the Florida Experiment Station which has been established at Fort Myers, in Lee County, many experiments are now being made to test the value of tropical products in that climate. It is stated in a report just published that that part of Florida produces larger and finer Pineapples, Avocado Pears, Sapodillas and Guavas than are grown in Cuba and other tropical countries. The reason for this may be due to the fact that the rainy and dry seasons are neither of them so severe as they are within the tropics and that the cooler winters give a longer season of rest, after which the plants grow off vigorously like northern vegetation with the return of spring. The experiments made with the Cocoanut at this place have been very encouraging, and the superintendent asserts that he can see no reason why that part of Florida should not produce all the cocoanuts needed for supplying the United States. Other fruits that are giving promise of success are the Cherimoya, the Star Apple, the Date Palm, the Spanish Lime, which is not a citrus fruit, but, botanically, Melicocca bijuga, the Sour Sop, the Cashew-nut and the Tamarind. Thus far the Mango and the Mangosteen, the Mammee Apple, the Sapota and the Bread Fruit have not given much promise of success.

A bulletin which has just been sent out by Professor Mark W. Harrington, Chief of the Weather Bureau, gives the opinions gathered from many shippers of perishable products throughout the country in relation to the proper protection of fruits and vegetables by heat and cold during transportation. These men generally concur in the statement that the danger in transportation from freezing has been eliminated by modern methods. The so-called lined car, which has a partition of tongued and grooved boards at the sides and ends, placed so as to leave an air-space of about four inches, answers for spring and autumn and during most winter weather, while the Eastman heating-car in extreme weather has proved a perfect protection. Perishable goods can be shipped with safety in ordinary freight-cars when the outside temperature is twenty degrees, Fahrenheit, and in refrigerator-cars when it is ten degrees. Fruit wrapped in heavy brown paper will endure fifteen degrees more cold than if it is not so wrapped. Dampness is very injurious, and products which are shipped in a dry condition can endure a much lower degree of temperature without injury than under moist conditions. It should always be remembered that the kind of packing which keeps out the cold will keep in the heat, so that there is often more danger from heating by process of decomposition than from injury by the cold. When a north wind is blowing on the prairie, cars which contain fruit are often covered with canvas on the north side. Oranges that have been frozen may be thawed without injury by putting them in cold water or in tight barrels immediately after arriving, allowing them to thaw out gradually. These are some of the points picked almost at random from what is altogether a most instructive circular.